



LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Area
(355226)
Machine Id
LIEBHERR R938 053191-1650
Component
Diesel Engine
Fluid
PETRO CANADA 10W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0291108	LH0284898	LH0274642
Sample Date		Client Info		17 May 2024	13 Feb 2024	01 Nov 2023
Machine Age	hrs	Client Info		4468	3960	3610
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	ABNORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>100	6	4	3
Chromium	ppm	ASTM D5185(m)	>5	<1	<1	0
Nickel	ppm	ASTM D5185(m)	>5	0	0	0
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)	>3	0	0	<1
Aluminum	ppm	ASTM D5185(m)	>15	2	3	1
Lead	ppm	ASTM D5185(m)	>30	0	0	<1
Copper	ppm	ASTM D5185(m)	>125	2	1	2
Tin	ppm	ASTM D5185(m)	>5	0	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual*	NONE	NONE	---	---
Yellow Metal	scalar	Visual*	NONE	NONE	---	---

CONTAMINATION

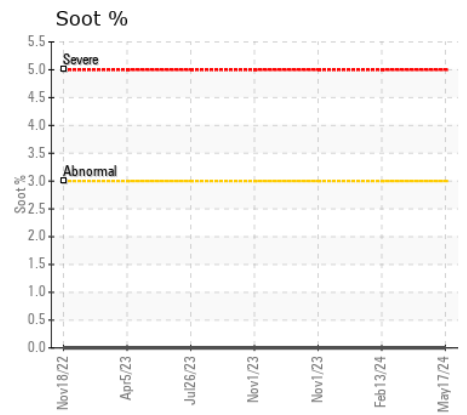
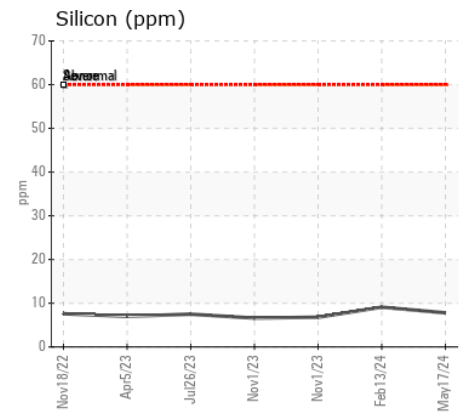
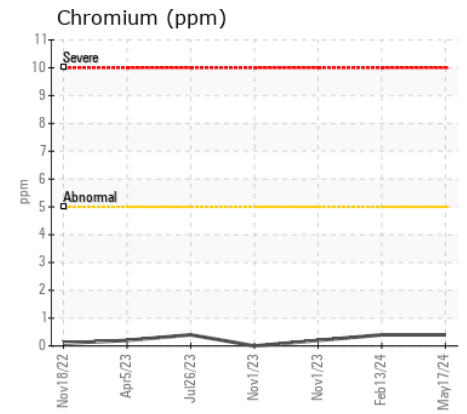
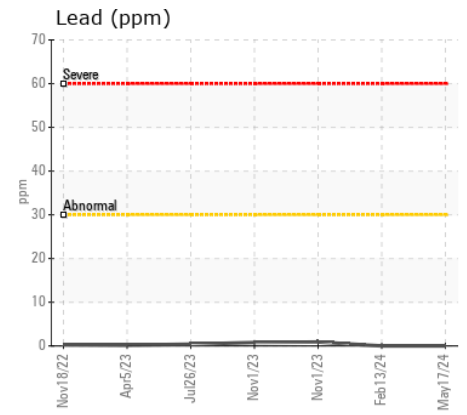
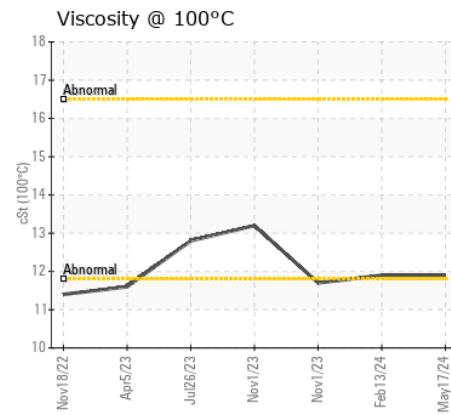
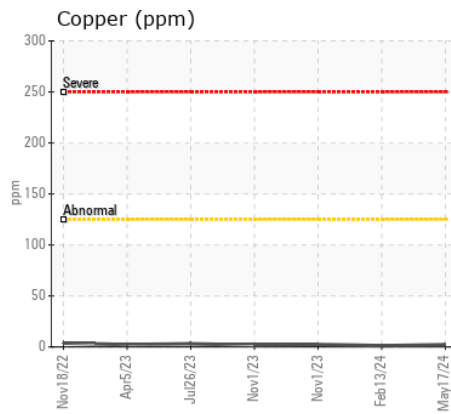
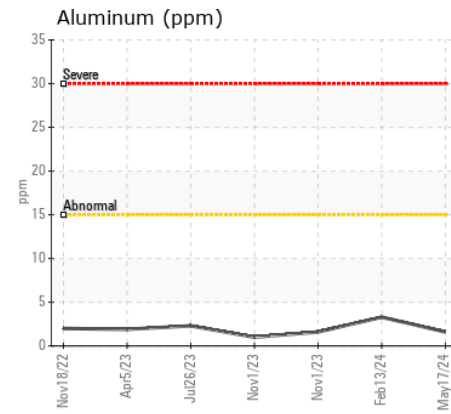
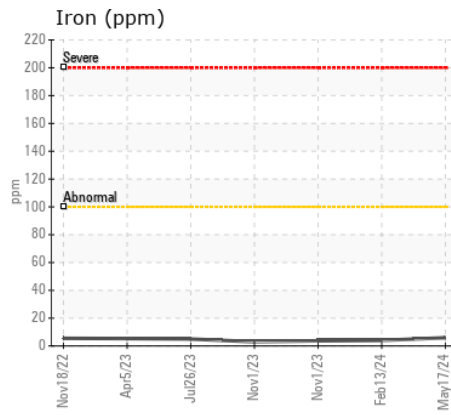
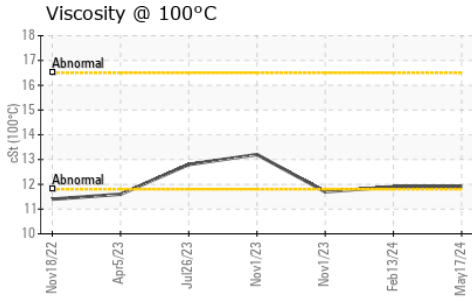
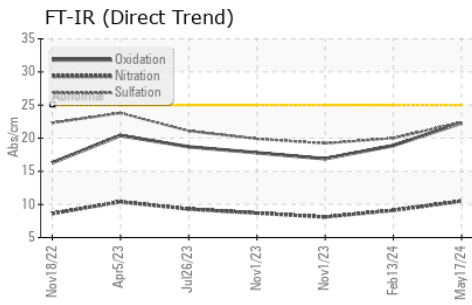
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185(m)	>60	8	9	7
Potassium	ppm	ASTM D5185(m)	>20	2	3	0
Fuel		WC Method	>5	<1.0	1.3	1.5
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	ASTM D7844*	>3	0	0	0
Nitration	Abs/cm	ASTM D7624*	>20	10.5	9.1	8.1
Sulfation	Abs/.1mm	ASTM D7415*	>30	22.4	20.0	19.2
Silt	scalar	Visual*	NONE	NONE	---	---
Debris	scalar	Visual*	NONE	VLITE	---	---
Sand/Dirt	scalar	Visual*	NONE	NONE	---	---
Appearance	scalar	Visual*	NORML	NORML	---	---
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG

FLUID CONDITION

The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185(m)	>20	4	4	2
Boron	ppm	ASTM D5185(m)		25	35	2
Barium	ppm	ASTM D5185(m)		0	0	<1
Molybdenum	ppm	ASTM D5185(m)		60	59	60
Manganese	ppm	ASTM D5185(m)		0	0	0
Magnesium	ppm	ASTM D5185(m)		1160	1091	981
Calcium	ppm	ASTM D5185(m)		887	858	1071
Phosphorus	ppm	ASTM D5185(m)		1025	1030	1008
Zinc	ppm	ASTM D5185(m)		1253	1197	1215
Sulfur	ppm	ASTM D5185(m)		2716	2901	2532
Oxidation	Abs/.1mm	ASTM D7414*	>25	22.3	18.9	16.9
Visc @ 100°C	cSt	ASTM D7279(m)		11.9	▲ 11.9	▲ 11.7



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0291108
Lab Number : 02637079
Unique Number : 5786241
Test Package : MOB 1 (Additional Tests: Visual)

THOMAS CAVANAGH CONSTRUCTION LTD
 RR # 2, 9094 CAVANAGH ROAD
 ASHTON, ON
 CA K0A 1B0
 Contact: Keith

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

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